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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,758	12/18/2000	Andre Kempe	D/A0052Q2	8961
7590	09/14/2004			
OLIFF & BERRIDGE PLC P O BOX 19928 ALEXANDRIA, VA 22320			EXAMINER SHORTLEDGE, THOMAS E	
			ART UNIT 2654	PAPER NUMBER

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/737,758

Applicant(s)

KEMPE, ANDRE

Examiner

Thomas E Shortledge

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 and 9-11 is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 9-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The attempt to incorporate subject matter into this application by reference to "Method and Apparatus for Factoring Ambiguous Finite State Transducers," "Method and Apparatus for Factoring Unambiguous Finite State Transducers," "Method And Apparatus for Aligning Ambiguity In Finite State Transducers," "Method And Apparatus For Reducing The Intermediate Alphabet Occurring Between Cascaded Finite State Transducers," "Method And Apparatus For Extracting Short Runs Of Ambiguity From Finite State Transducers," is improper because of the missing application numbers assigned to each title.

Drawings

2. Figures 1-12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: All of Figures 17, 18, 21, 23, 24, 44, 49, 51, 65, 69, 70, 71 and Fig. 19, elements 1118, 1120, 1122, 1124, 1126, 1128, 1130, Fig. 36, 2000, 2001, 2002, 2005, 2004, Fig. 43, 2202, 2203, 2206, 2209, 2210, 2208, 2211, Fig. 47, elements 2604, 2605, 2608, 2609, 2611, 2612, Fig. 54, elements 3300, 3306, Fig. 56, elements, 3500, 3502, 3501, 3504, 3503, and Fig. 59, elements, 3728, 3730, 3732, 3734, 3736, 3738. Correct drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 2-4 and 9-11 are objected to because of the following informalities: the symbol "?" is not defined within the claims. Appropriate correction is required. The examiner has interpreted "?" as an unknown symbol.

Allowable Subject Matter

5. Claims 2-4 and 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and overcoming the claim objections above.

6. The following is a statement of reasons for the indication of allowable subject matter:

As for claims 2 and 9, Mohri (6,032,111) and Schabes et al. (5,610,812) teach creating left and right deterministic finite-state transducers using a series of substations while not factoring the unknown symbol.

However, these references do not teach:

further comprising the step of factoring the unknown symbol “?” in the input FST into arc label sequences $[\bar{?}, \delta:\lambda_i]_{LR}$ and $[\lambda_i:\varepsilon, ?:\sigma^{out}]_{RL}$, where:

λ_i is a diacritic

σ^{out} is an output symbol, and

δ is a deterministic empty string.

Claims 3,4,10, and 11 would be allowable since they would then further limit said thus amended independent claims 2 and 9.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 5-8, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohri (6,032,111) in view of Schabes et al. (5,610,812).

As to claim 1 and 8, Mohri teaches:

Replacing each occurrence of the unknown symbol in the input FST with an unknown symbol and a diacritic to define a left-sequential finite-state transducer (FST) (a finite-state transducer that identifies occurrences of the left context string, in which the it is only identified after the $<_1$ and $<_2$ are added, col. 11 lines 1-5).

Replacing each occurrence of the diacritic with a symbol representative of an empty string and an output symbol to define a right-sequential finite-state transducer (FST) (a finite-state transducer that is able to identify a placeholder such as the $>$ with the empty string output symbol, col. 10, lines 54-60).

Mohri does not teach replacing steps avoiding direct factorization of the unknown symbol.

However Schabes et al teach an identity function containing the unknown symbol “?” (Fig. 3 and col. 8, lines 17).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the right and left sequentials of Mohri with the identity function for the unknown symbol of Schabes et al. to allow the tagger to operate faster as taught by Schabes et al. (col. 6, line 12).

As to claims 5, and 12, Mohri teaches the left-sequential FST and the right-sequential FST are adapted for performing language processing (context-dependent rules are often used in natural language and speech processing areas, col. 2, lines 12-13).

As to claim 6, and 13, Mohri teaches wherein the language processing comprises one of the tokenization, phonological analysis, morphological analysis, disambiguation, spelling correction, and shallow parsing (areas include morphology, phonology, syntax, text-speech processing and speech recognition, col. 2 lines 1-4).

As to claims 7 and 14, Mohri teaches the left-sequential FST and the right-sequential FST are lexical transducers (finite-state transducer used for language processing operable over an alphabet, col. 6, lines 31-36).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mohri et al. (6,574,597), and Roche (Factorization of Finite-State Transducers).

Mohri et al. teach a combined weighted network of transduces with the ability to perform speech recognition.

Roche teaches building left and right sequential transducers from a larger finite-state automata.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas E Shortledge whose telephone number is (703)605-1199. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on (703)306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TS 8/20/04


RICHMOND DORVIL
SUPERVISORY PATENT EXAMINER